FARM INDEX

U.S. Department of Agriculture
June 1977

Fueling U.S. Agriculture

Outlook

The mood is wait and see as crops head into the critical growing season. If weather behaves, the outcome could be bumper harvests . . . soybeans up over a fourth from last season . . . feed grains, 5 or 6 percent. Don't count on wheat and rice . . . output will be off, although their old-crop stocks are bulging. Also, don't count out drought. Southeast joins the West and upper Plains States on the worry list. All considered though, bigger crop supplies would drag down average farm prices for some crops. For example:

Oomph is gone already from grain prices. Winter wheat crop keeps looking better in the Plains and Midwest. Earlier drought fears have been washed away by moisture. For all wheat, odds favor a crop surpassing 2 billion bushels for the third year in a row. Corn crop is off to an excellent start . . . another record?

Meanwhile, soybeans uphold their reputation. The Cinderella crop keeps making headlines. Good rains in major bean areas signal big leap in production . . . maybe 30 percent over 1976. Prices to farmers should tip the scales this season, easily double the 1975/76 average. Bean stocks slated to trickle down to pipeline levels by September.

Cotton tune not baleful. Output should top last year's if farmers stick to planting intentions. Cotton supplies remain tight but bigger 1977 crop should replenish the bin and spark higher cotton use later in the season. Farm prices continue upbeat. Export demand remains strong.

Beef output retrenches. Production expected to drop well below year-earlier levels. Cost-price squeeze caused producers to cut back on feedlot replacements. Slaughter of cattle not in feedlots could diminish, too, if summer pastures are in good shape. Prices to cattlemen to turn up in last half 1977. Cattle feeders might show profits for first time since 1975.

Woolly comeback? Tight world supplies bode well for continued price strength but longer term future is less certain. Textile mills see manmade fibers a better buy. Wool use is lagging. Meantime, U.S. sheep producers are getting at least two-thirds higher prices for shorn greasy wool than a year ago.

Retail food prices on the move. Unlike 1976, grocery store prices will trend up as the year wears on . . . 4 to 6 percent for the whole year, given favorable weather . . . 6 to 7 percent if weather turns sour. Moderate increases on the horizon for meats, dairy products, vegetable oils, processed fruits and vegetables, and possibly sugar products. Biggest jumps: coffee, cocoa, and other imported items. Non-U.S. farm foods will account for nearly half the run-up in our food bill.

No relief for farm production costs. They're apt to climb about 6 percent for the year as a whole, due to higher price tags for items farmers buy in the marketplace. But items produced on farms will cost more, too—namely feeder animals and manufactured feeds. This could mean a dip for realized net farm income (excludes change in inventories). Including an expected buildup in inventories, on the other hand, the income figure might approximate that of last year under favorable weather. If weather doesn't cooperate, look for a sizable gain in total net farm income . . . could be several billions more than last year, when the net came to around $22 billion.

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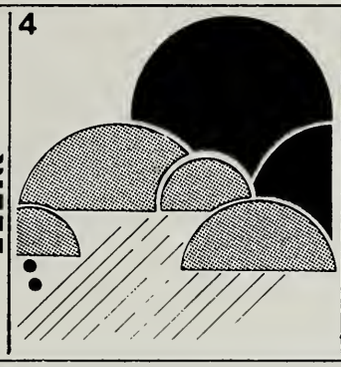

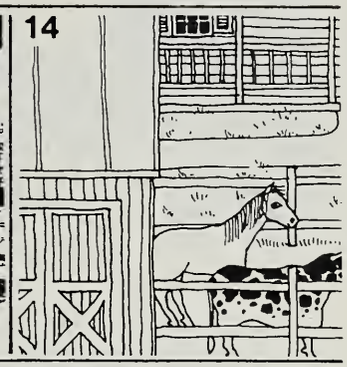

Features

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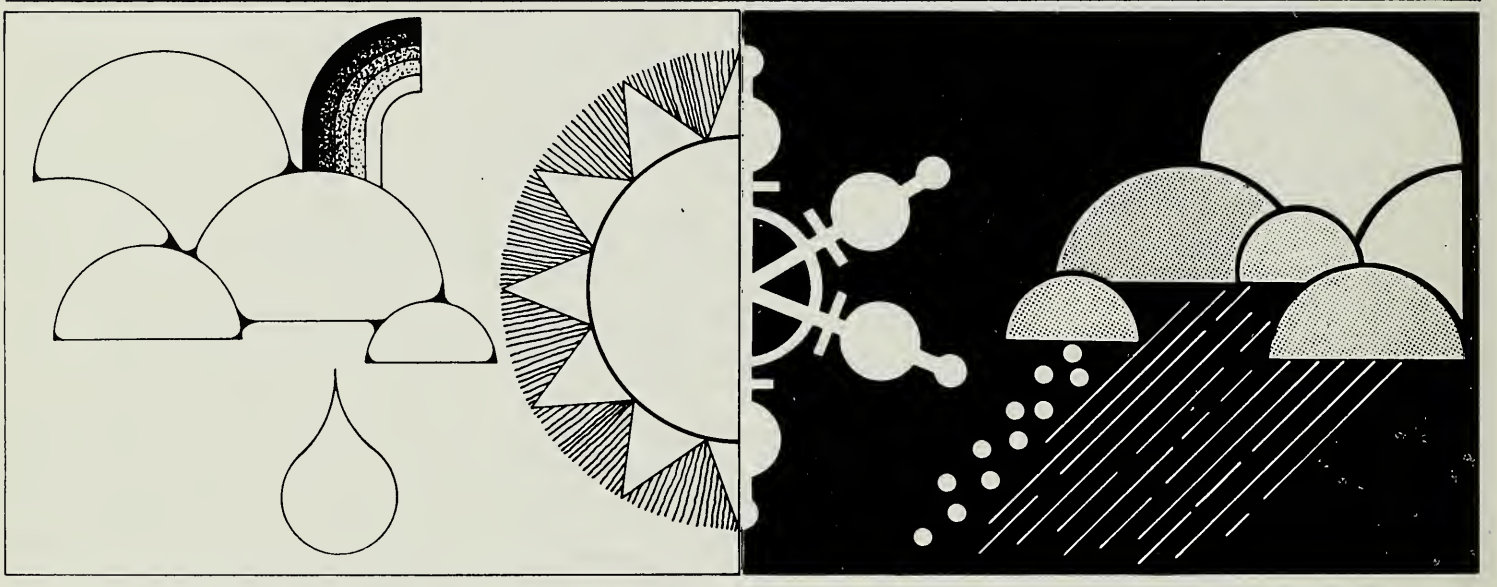
A Break in the Weather?



Editor's Note: Weather conditions, always a crucial factor to agriculture, continue to loom as a dominant "if" this year. In a continuing attempt to assess economic impacts of this fluid situation, *Farm Index* offers the following analysis, based on data available in early May.

After freezing and drying key agricultural areas during the devastating 1976/77 winter, U.S. weather conditions improved to provide good spring planting conditions over much of the Nation.

But left in their wake was the consequence of rising price indexes for farm products, both at the farm and wholesale levels.

Even so, U.S. agriculture has already shaken off much of the immediate impact of the winter, as fresh vegetable supplies have returned to more normal levels after the freeze, and new crops are in the ground now to offer fresh hope to drought-stricken areas.

As of April 1, total acreage of field crop plantings was expected to reach 284 million acres—up 1 or 2 million acres over 1976.

Strong prices for soybeans and cotton are enticing farmers to boost production to meet high demands. And corn farmers, apparently unfazed by indications of large supplies and only so-so prices, are very well along in seeding perhaps as large an acreage to corn as last year's, judging by their April intentions.

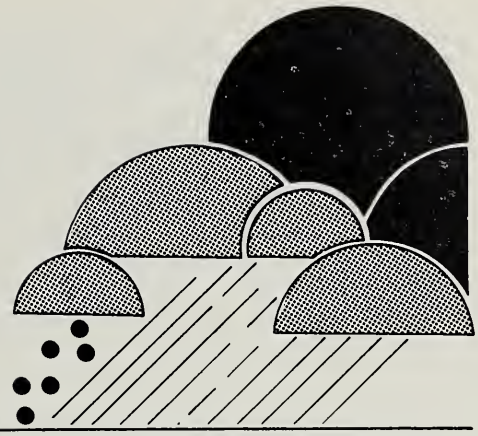
Looming weather. The farmer's major lingering concern now is the weather, which will determine the size of harvest and influence prices that consumers will pay in coming months.

ERS researchers, acutely aware of the important but fickle impact of weather, offer good-weather, bad-weather alternatives in assessing production and price outlooks.

Good-Weather Alternative. If the cooperative weather trend of the spring continues in much of the Nation for the remainder of the year, the anticipated large plantings will yield big crops again this year.

Soybean output could rise almost a fourth, and feed grain production could increase 5 to 6 percent. Wheat and rice production would, however, probably drop below 1976 levels. Such larger supplies for most crops could push down average prices during the 1977/78 season—especially soybeans and feed grains. Even so, soybean prices could remain relatively strong, perhaps averaging $5 to $6 at the farm in 1977/78, under favorable conditions for crops.

Income, prices rise. Even with relatively favorable weather during the rest of the year, farmers' gross income for all of 1977 would rise perhaps 3 or 4 percent from 1976's $104 billion, with most of this increase due to higher average prices for the crop and livestock products.



For livestock producers, the outlook is especially good: prices are expected to continue strengthening as beef output drops below a year earlier.

Consumers should have a special interest in hoping for the good-weather alternative.

Even with good weather, food prices would rise less than otherwise this year, with moderate increases in the retail prices of meats, dairy products, vegetable oils, processed fruits and vegetables, and possibly sugar products. Imported foods—especially coffee and cocoa—will add even more pressure to a trend of rising food prices.

As a result, retail food prices for 1977 may, given favorable weather, average 4 to 6 percent above those in 1976. The wide range reflects the uncertainty of prices for coffee and other imported foods, which will account for more than half of the increase.

The expected pattern of food prices this year is dramatically different from that in 1976, when prices held stable or edged downward during the year. In 1977, prices will probably continue rising. Then, even under relatively favorable weather conditions, prices at the end of 1977 may be substantially higher than those in late 1976.

Bad-Weather Alternative. If weather conditions take a nasty turn at crucial stages of the crop year, the impact may be especially hard on consumers' pocketbooks.

A hot, dry summer that reduced yields of major crops and pastures could accelerate food price increases, driving up the average prices for the year to 6 or 7 percent above 1976 —as opposed to 4 to 6 percent increases under the good-weather alternative.

Livestock boost. However, drought conditions would probably boost supplies of livestock products temporarily to ease price rises during the summer. As a result, the greatest impact of a poor 1977 crop on retail prices would come next year.

For farmers, as a group, the bad-weather alternative is far less negative than for consumers. Poor weather conditions here and abroad would reduce U.S. crop output at a time when overseas demand would be strengthening, thus driving up prices in 1977/78.

In fact, unfavorable weather that results in sharply reduced crop output both here and abroad could give crop producers as a group near-record cash receipts. In turn, realized net income would be much higher than in 1976, but around $2 billion of that gain would come from a drawdown of previously accumulated crop inventories.

Bad weather boon. In all, total net farm income in 1977 would run several billion dollars above 1976's $22 billion under the unfavorable weather alternative.

Of course, this hardly means that individual farmers will be praying for drought. While the farm sector as a whole would gain higher net income with a poor harvest, the individual farmer's financial position is generally determined by the size of the crop he reaps from his own field—or doesn't reap. A Colorado farmer could take little heart from a high national farm net income figure, if his own fields were wiped out.

Fortunately for both the U.S. consumer and the individual farmer, researchers cautiously concluded in early May that the odds seem to favor U.S. and world crop production at levels closer to the favorable weather alternative than to the poor weather scenario.

Cautious optimism. Greatly improved U.S. weather conditions and the adaptability of American farmers to adverse conditions—as evidenced by the large plantings that farmers accomplished at a fast pace—offer a tentative, finger-crossing basis for optimism.

Early prospects for 1977/78 world agricultural production seem favorable. Fall-seeded crops in the Northern Hemisphere wintered well, and large harvests are expected. The optimism held through spring planting, as weather and soil conditions were generally promising around the world.

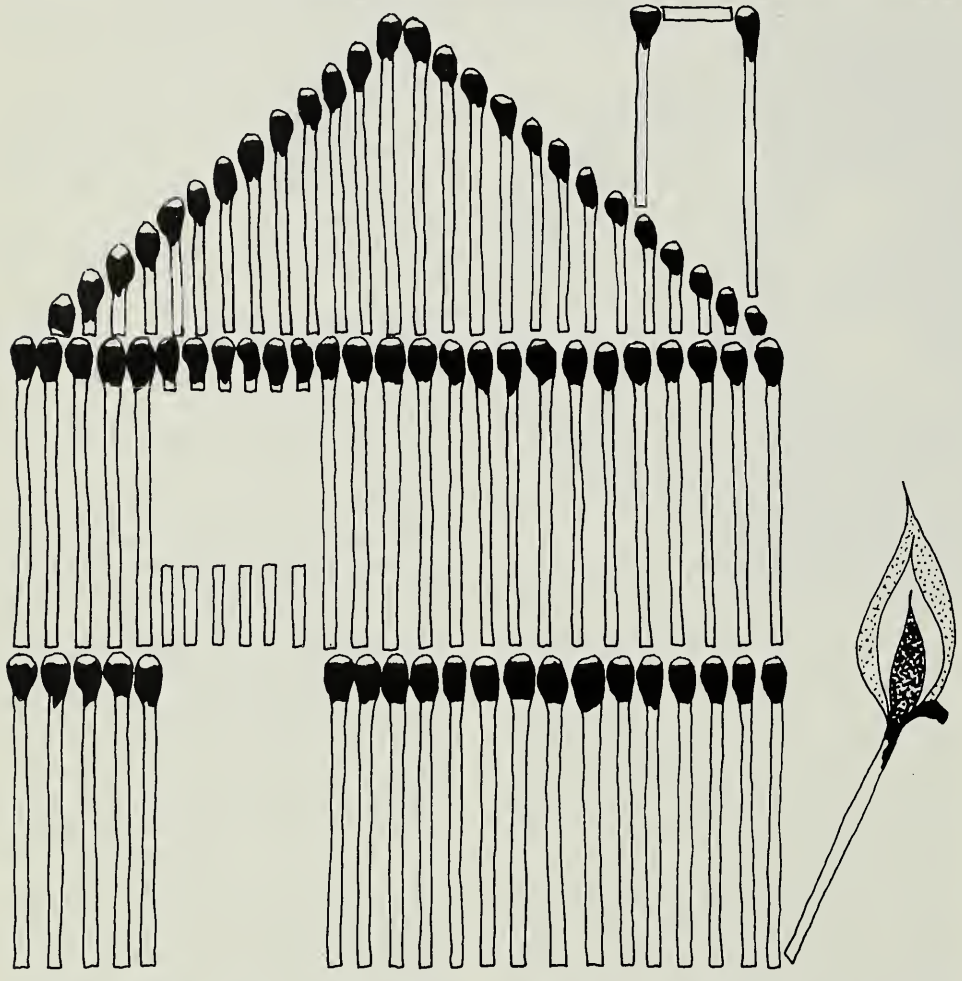
Early prospects point to a good 1977/78 world wheat and coarse grain crop—only slightly below last year's record 1,103 million tons, with a further buildup of stocks expected.

Hope for coffee. One item of foreign agricultural news may be especially welcomed by U.S. consumers: If weather favors production increases, wholesale prices of coffee and cocoa may start to trend downward this year, along with those for two American-produced short-supply commodities, cotton and protein meal.

Despite the cautiously optimistic view, ERS researchers emphasize a fact that farmers know all too well: Nothing is more uncertain than tomorrow's weather.

[Based on special material prepared by the ERS Outlook and Situation Board.]

Fighting the High Cost of Rural Fire Protection



Some people don't need Smokey the Bear to remind them about the destruction caused by fires—especially rural people, who, by their very remoteness, are extremely vulnerable to and aware of fire damage.

ERS conducted a rural fire study to assist local officials in choosing and establishing a fire protection system to fit their community needs. While the study was carried out in western Oklahoma, it was designed to help officials throughout the Great Plains and beyond.

The study developed a procedure to estimate the number of fires in a given service area; discussed capital and operating costs and alternative financial arrangements; and suggested training sources for volunteer fire departments.

How many fires per year? The number of fires in a service area can be estimated by gathering information on the frequency and type of fires from local fire departments and comparing that information with demographic characteristics of the area.

For example, there were 14,362 rural housing units in the study area in 1974 and 48 rural housing unit fires. By dividing 48 into 14,362, a fire frequency coefficient of 299 is established, which indicates that for every 299 rural housing units, one rural housing unit fire can be expected each year (1974 coefficients were found to be representative for other years).

Examine existing equipment. Because of the high capital expenditures involved in establishing a rural fire protection system, the study urged local leaders to scrutinize any firefighting equipment already on hand. Available fire trucks could possibly be modified to increase capabilities; used equipment could be purchased; or surplus equipment obtained from the Government.

If new equipment has to be purchased, local leaders need information on the types of equipment that are dependable and that deliver the services needed.

Since small town fire departments often have both rural and town responsibilities, two types of fire trucks should be considered. The standard rural truck has a 24,000-gross-vehicle-weight chassis and a 500-gallon water tank (many rural trucks are equipped with even larger tanks because of limited water supplies in rural areas). In 1975, this truck cost about $32,000, which included the auto chassis, booster tank, pump, and auxiliary equipment.

A smaller truck—with a 7,600-gross-vehicle-weight chassis and a 300-gallon tank mounted on a standard size 4- by 8-foot pickup truck

body—is an inexpensive but effective way of protecting rural areas. Such a truck cost over $11,000 in 1975.

Other expenditures. In addition to the truck, there are also capital outlays for establishing a communications system and building a fire station. The cost of dependable communications relies to a large extent on the size of the area involved, its topography, and whether the area has any kind of an acceptable communications system in operation.

In the study, two types of systems were examined—the mobile repeater and the remote base station, both of which should function for at least 10 years.

The mobile repeater system involves placing a repeater unit on a tower high enough for transmission.

The unit repeats the message and sends it to alternating receiving units. If a tower exists (which is usually the case), this system would cost approximately $4,600 (1975 prices) for a 100-watt, one-channel system. In addition, each mobile unit would cost $1,310 for a 100-watt unit.

Alternative communications system. The remote base station system also includes placing a unit on a tower. However, this system sends the message to only one receiving base station by way of a telephone line (the telephone company charges a monthly rate of $30-40). The one receiving base station unit would cost $370, and each mobile unit, $1,310—the same as for the mobile repeater system. Installation and equipment at the tower would run about $3,000.

Building the fire station entails more costs. The study determined that the cost for completely contracting a two-bay, all-metal fire station that houses two trucks for a volunteer department—a part-paid or full-paid department would need additional room for bunks and showers—in 1975 was approximately $16,000. Of course, volunteer carpenters or a remodeling effort on an existing building would lower that figure.

Most common firefighting system. The all-volunteer department is the most common type of firefighting system used in small communities. It typically includes 12-20 volunteers, with about a third available for each fire. The firefighters usually receive about $3 per fire and $2 per meeting.

The part-paid system generally includes one or two full-time employees, who receive a monthly salary, and 12-20 volunteers, who are often paid in the same manner as the all-volunteer system. The full-paid system employs enough people so that at least one fire truck can be efficiently operated by firefighters on duty at the station.

Supporting the fire department. Because the capital and operating costs of an adequate fire protection system are extremely high, community leaders should examine the different means of supporting an efficient system.

Many rural communities depend on donations to support their fire department, but as costs increase, this method becomes exceedingly difficult. Some communities charge a fee per run, which varies from $25-100. Rural residents can provide for a means for paying for each call by including a rider on their homeowners' insurance policy—the extra fee for the rider is usually small and helps considerably in financing the fire department.

Limited financial source. The county government can help support a local volunteer fire department by using funds to buy equipment. However, with many demands for county funds, this financial source may be quite limited.

Organizing a legal fire protection district is another method of financing a rural fire system. Once organized, the board of directors calls an election to ask residents if bonds should be issued to support a district fire system. If passed, an annual assessment is placed on real property to pay interest and retire bonds.

Federal funds. Two Federal sources are available to assist a rural fire department: the Rural Community Fire Protection Program, which provides some grant money for planning, training, purchasing equipment, etc., and the Farmers Home Administration, which makes loans to support a wide variety of community facilities, including fire and rescue services.

In Oklahoma, State-level training of firefighters is administered through Oklahoma State University. Community leaders in other areas should contact their State fire marshal to see if similar services are available.

[Based on *The Economics of Rural Fire Protection in Oklahoma*, by Gerald A. Doeksen, Economic Development Division, in cooperation with Oklahoma State University.]

Balance Sheet of Farming: Good News, Bad News

The financial page for the Nation's farming sector carries mixed news. Moving into 1977, operators' return on equity sank to a 9-year low at a time when the debt-to-asset ratio flashed signals that the farm economy was enjoying good health.

The situation for return on equity is not as bad as it looks, however. About three-fourths of the operator's equity is tied up in farm real estate. Land values shot up by 16 percent last year, so the real wealth of farmers increased. Net farm income, meantime, took a tumble, dropping around 14 percent between 1975 and 1976 to $22 billion.

With equity advancing faster than income, return on equity posted only a 3.3-percent gain in 1976 versus 5.2 percent the year before.

Debts vs. assets. The ratio of farm debts to assets, by contrast, registered 16.1 percent going into 1977 —about the same as a year earlier. (That ratio, incidentally, compares favorably with most nonfarm businesses.) Farm debt rose by 12 percent, whereas the value of assets mounted by 13 percent.

Besides real estate, physical assets include livestock, machinery and motor vehicles, crops stored, and household furnishings. The value of livestock this past January was down just a shade from a year earlier. A sharp drop in value of hogs and pigs more than cancelled some increase in cattle and calves, stemming from higher prices. Value of machinery and vehicles picked up 11 percent, though lagging behind the 17-percent increase of 1975-76.

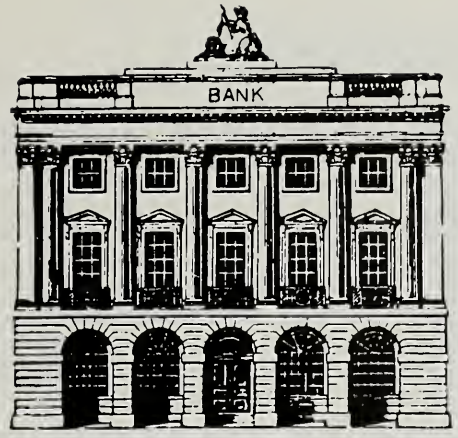
Crop inventory. Crops stored showed little change, with other crops, namely wheat, offsetting an increase in soybeans. Value of household items advanced about 7 percent, slightly less than the average since 1970.

Financial assets—deposits and currency, U.S. savings bonds, and investments in cooperatives—grew a modest 5 percent in 1976, compared with an average of 7 percent since 1970. Most of the improvement last year was due to a 10-percent growth in net worths of farmer cooperatives.

BALANCE SHEET OF THE U.S. FARMING SECTOR ON JANUARY 1[1]

Item	1950	1960	1970	1975	1976	1977	Change 1976 to 1977
			Billion Dollars				*Percent*
Assets							
Physical assets:							
Real estate	75.3	130.6	206.9	349.8	397.3	461.3	16.1
Nonreal estate:							
Livestock	12.9	15.3	23.5	24.6	29.5	29.1	-1.5
Machinery and motor vehicles	12.2	22.7	32.3	56.5	65.9	73.0	10.8
Crops stored on and off farms	7.6	7.7	10.9	23.3	19.8	20.0	1.2
Household equipment and furnishings	8.6	9.6	9.8	15.3	16.2	17.4	7.0
Financial assets:							
Deposits and currency	9.1	9.2	11.9	15.1	15.6	16.2	3.1
U.S. savings bonds	4.7	4.7	3.7	4.3	4.4	4.5	2.8
Investments in cooperatives	2.1	4.2	7.2	10.5	11.7	12.8	9.7
Total	132.5	204.0	306.2	499.4	560.4	634.3	13.2
Claims							
Liabilities:							
Real estate debt	5.6	12.0	29.2	46.3	51.1	56.1	9.8
Nonreal estate debt to:							
CCC	1.7	1.2	2.7	.3	.3	1.0	184.1
Other reporting institutions[2]	2.8	6.7	15.8	29.2	33.1	37.8	14.2
Nonreporting creditors[3]	2.3	4.9	5.3	6.0	6.3	6.9	9.4
Total liabilities	12.4	24.8	53.0	81.8	90.8	101.8	12.1
Proprietors' equities	120.1	179.2	253.2	417.6	469.6	532.5	13.4
Total	132.5	204.0	306.2	499.4	560.4	634.3	13.2
Debt-to-asset ratio (percent)	9.4	12.2	17.3	16.4	16.2	16.1	—

[1] Includes Alaska and Hawaii beginning with 1960. [2] Loans of all operating banks, production credit associations, the Farmers Home Administration, and discounts of the Federal intermediate credit banks for agricultural credit corporations and livestock loan companies. [3] Loans and credit extended by dealers, merchants, finance companies, individuals, and others. Revised beginning with 1961.



Farmer-owned bank deposits rose only slightly.

On the bottom half of the ledger, the 12-percent increase in farm debt from a year earlier about matched the average gain since 1970.

Real estate debt. Farm real estate debt on Jan. 1, 1977, was up a tenth from the start of 1976. Federal land banks held over twice the loans of commercial banks or life insurance companies, but the rate of lending by the Federal land banks has slackened since 1975.

On the other hand, lending by life insurance companies accelerated during 1976, reversing a trend prevailing since the mid-1960's.

Nonreal estate loans came in for a 13-percent increase, with commercial banks holding about half the loans. The banks' share of new loans grew faster than a year earlier; growth in loans by production credit associations held its own.

Loans by the Commodity Credit Corporation for eligible crops more than tripled during the 12-month period, reflecting farmers' expectations of higher prices and their recognition of CCC loans as a source of credit.

[Based on manuscript, Balance Sheet of the Farming Sector, 1976, by Carson D. Evans and Richard W. Simunek, National Economic Analysis Division].

The Bankers' View

Like other businessmen, farmers borrow from Peter to pay Paul, although this year they're knocking on Peter's door more than usual. Dry weather and low prices—for wheat and cattle in particular—have thrown a monkey wrench into many farmers' intentions to repay debts on schedule.

Concerned about a flurry of reports saying farmers are under abnormal financial stress, USDA surveyed bankers in the key wheat States to see how they size up the situation.

Some 400 banks, in a nine-State area accounting for roughly a fourth of all farms in the U.S., took part in the survey. Here's what the bankers had to say:

Some borrowers in trouble. The number of borrowers facing major cash flow and credit problems is larger than normal, though the financial plight of farmers is not uniform among the nine States.[1/]

There's no dearth of loan funds, generally. However, the demand for loans has been increasing faster than deposits in some farm communities where farmers usually provide a large portion of deposits and also use a major share of the loan funds.

The consensus of the bankers is that around 28 percent of their farmer clients as of April will have to refinance existing debt or else sell some assets.

Another 6 percent of borrowers can't repay based on expected income. Among States hardest hit by the financial squeeze are Nebraska, where bankers judged that 9 percent of their borrowers can't meet payments; Kansas, with 10 percent; and Oklahoma, with 13 percent.

The lucky two-thirds. About two-thirds of the borrowers will have no difficulty in repaying loans. Yet the bankers conceded that on the whole, repayment ability is worse than normal. Sixty-one percent of those surveyed indicated that this is an off year. About 35 percent said that a larger than normal percentage of farmers would need refinancing, and 38 percent said the percentage of borrowers unable to repay their loans was above normal.

Ninty-three percent of all borrowers in the States surveyed can expect to receive financing from bankers. Of the remaining 7 percent, about two-thirds won't get loans because of problems with cash flow and low equity, whereas the rest will lose out because of what bankers consider poor management.

Deposits the crux. As the lenders see it, lack of loan funds is not a big problem, except for Kansas, Nebraska, and South Dakota. The problem springs from a slowdown in deposits. From April 1976 to April 1977, agricultural loans not secured by real estate increased 19 percent. Total deposits increased by only 11 percent for the nine-State area.

[Based on *Farm Financial Survey, April 1977*, compiled by Robert Reinsel, National Economic Analysis Division.]

1/ Colo., Kans., Minn., Mont., Nebr., N.D., Okla., S.D., Texas.

Fueling U.S. Agriculture Part I

As tractors replaced horses, chemical warfare ensued against the bug, and more farmers began using commercial fertilizers, agriculture stepped out on a decidedly energy-intensive path early in the 20th century.

It seemed a clear-cut, logical choice at the time, and few people even thought about the implications until recently. After all, energy was cheaper and more dependable than manpower. In fact, farm wage rates almost tripled during 1960-73, while fuel and energy costs edged up only 10 percent.

Then, in 1973, the energy crisis jolted farmers into a new perspective. Energy's economic edge began to fade as its cost soared—over 70 percent in only 4 years.

Moderate rises. Of course, 1974 was the whopper; recent rises have been more temperate. Early this year, farmers were paying about 6 percent more than a year ago for their fuel and energy supplies.

And price is only part of the problem. Energy supplies and availability are obviously the other. And U.S. agriculture is too energy dependent to revert back to "the good ol' days." Thanks mainly to the use of fuels and energy, American farmers have been able to dramatically boost yields to help feed a growing domestic and world population.

Let's look at how the agricultural system uses its energy—about 22 percent of what the whole country uses. By agricultural system, we mean the production, processing, marketing, and consumption of food, natural fibers, and forest products.

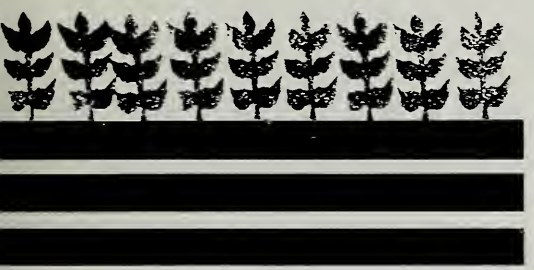
Energy use. Subtracting the energy used by forestry and natural fibers, the food system itself uses 16.5 percent of the Nation's total energy consumption, or 12.4 quadrillion BTU's.

Of the energy used in our food system, processing takes the biggest chunk (29 percent), followed by in-home food preparation (26 percent), production (17.5 percent), and away-from-home preparation (16.9 percent). Distribution, transportation, and equipment manufacturing make up the remainder.

In other words, over four-fifths of the energy is used beyond the farm, which accounts for only 17.5 percent of the total energy used by the agricultural system. This is less than half the energy used in in-home and away-from-home food preparation.

Major importance. In the face of oil embargoes, spot shortages, and energy allocations, the energy directly used in farm production has become of major importance. Since timing is so crucial in agricultural production, it is necessary that energy be available when needed.

To find out just how much energy our agriculture does need, ERS and the Federal Energy Administration (FEA) have recently released bench-



mark estimates. The first such detailed estimates ever made, they break down agricultural production by State, energy type, commodity, operation, and month of energy use. They are based on 1974 data.

The estimates take into consideration only those functions contributing to actual production activities. They do not include energy consumed by farmers for residential uses or nonbusiness transportation.

ERS-FEA estimates. According to the estimates, in 1974 about 1.3 quadrillion BTU's went into U.S. agricultural production. Another 0.7 quads were used to manufacture agricultural fertilizers and pesticides.

In fact, the energy going into these farm chemicals was more than double that used directly in any single farm operation. Of the total energy used in farm production, they took a 36-percent slice—31 percent for fertilizers and 5 percent for pesticides.

Of direct energy use on the farm, pumping of irrigation water required more energy than any other major farm operation—slightly over one-fifth. Preharvest field operations and use of the pickup truck and auto for farm business were close behind, each accounting for almost another fifth.

Other energy users. Harvest operations took the next biggest share at 16 percent, followed by livestock operations (over 12 percent), crop drying (8 percent), and other crop operations (nearly 5 percent).

Breaking the data down between crops and livestock, crops took most of the farm energy—89 percent.

On a commodity basis, corn was the leading energy user, consuming nearly one-fourth of all energy used in farm production. It managed to take the lead basically due to sheer numbers of acres planted and harvested, as well as its high fertilizer requirements.

The other top commodities, each using between 5 and 8 percent of total farm energy were, in descending order: winter wheat, cotton, soybeans, alfalfa, and grain sorghum. Beef cattle were next in line, accounting for 4.6 percent.

Leading energy consumers. Energy demand was fairly concentrated on a geographical basis — seven States took almost half the energy used in farm production. These were the big grain-producing States of Iowa, Nebraska, Kansas, and Illinois; the dairy State of Minnesota; and the major irrigators, Texas and California.

Now that we have an idea of where energy goes in agricultural production, let's look at what kinds of energy are used in the food system as a whole.

Approximately half is petroleum, and another 30 percent is natural gas. Electricity, although a secondary form of energy, makes up most of the remainder. Depending upon geographical locale, electricity is generated from fuel oil (as in the Northeast), natural gas (as in the Gulf States), or coal (as in the north-central region). Only a small amount is hydroelectric.

Gasoline and diesel fuels. Gasoline and diesel fuels for tractors, combines, and other farm machinery make up four-fifths of the energy used in crop and livestock production. Crops requiring the most gasoline—nearly two-thirds of that used by all crops—are corn, soybeans, alfalfa, winter wheat, and hay. Those using the most diesel—almost 60 percent of all crops—are corn, soybeans, cotton, winter wheat, and corn silage.

Of the livestock, beef cattle lead, followed by milk cows and hogs. Most of this energy goes into farm vehicles, for feed hauling and waste disposal.

The major user of fuel oil is the citrus industry, with oranges and grapefruits taking over one-half of that used by all crops. The fuel oil largely goes into smudge pots main-

tained in the groves to ward off frost. Flue-cured tobacco is the next big user, taking over a fifth of the fuel oil used in crop production for drying and curing. Livestock production uses very little of the oil—less than 3 percent of that used in farm production—with all of it in the poultry industry.

LP gas. LP gas is used most extensively for crop drying—corn and flue-cured tobacco take, for this purpose, about two-thirds of the LP used in crop production. Production of all livestock except sheep and lambs uses some quantity of LP, but the poultry industry—broilers in particular—uses the most. Most of this LP is used for brooding or heating poultry houses.

Five crops—grain sorghum, alfalfa, corn, cotton, and rice—take nearly three-fourths of the natural gas used in crop production. Irrigation and crop drying account for most of the use.

Electricity. Electricity, the least used major energy type in agriculture, mainly powers irrigation, lighting, and mechanized livestock operations. The five crops which take about half of the electricity going into crop production are alfalfa, hay, cotton, corn, and winter wheat. The dairy industry is the major livestock user of electricity, followed by hog operations and feedlots.

Another form of energy, used in only a small amount in farm production, is coal. This energy form—at least in direct application—is used only by the poultry industry. And all that is for brooding.

As can be surmised from the breakdown of energy forms and their use, energy demand on the farm is highly seasonal. For example, gasoline use peaks with the crop harvest in late summer and early fall; diesel needs are greatest in the spring months during land preparation and planting; and natural gas and electricity are used in greatest quantities during the summer months for powering irrigation pumps.

Energy use up. The total amounts of energy used in farm production have shown a small but significant increase over the past several years. Main reasons: more acreage in crops and expanded livestock production.

Most of the increase has come from natural gas, LP gas, and electricity, all of which posted gains of 8 percent from 1974 to this year. Use of these fuels increased mainly due to more acres under irrigation, greater acreage, and an uptrend in artificial crop drying.

[Based on special material from Tom VanArsdall and Edward Rall, National Economic Analysis Division.]

Next month, Part II of "Fueling U.S. Agriculture" deals with the energy supply situation for American agriculture, conservation measures being adopted, and research on alternative forms of energy.

Energy's Share of the Food Dollar

Energy used on the farm seems like a pretty intangible thing, except to the farmers who depend on it. However, farm energy translates into dollars and cents for the consumer.

Since energy requirements of the food system are generally greater than in many nonfood and service industries, a bigger portion of the food dollar goes for energy costs. For example, energy normally accounts for 4-10 percent of the cost of most consumer products, but for food items, the average share is about 9 percent. This is particularly significant considering that food products account for 16 percent of total consumer expenditures (for lower income groups the proportion is much higher).

The accompanying chart breaks down energy costs for selected food groups, which represent about 80 percent of the total food mix bought by consumers.

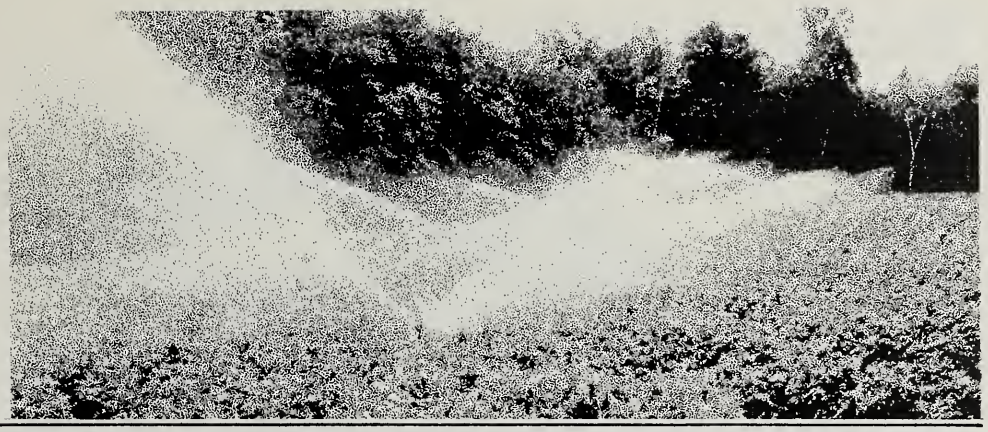
It should be stressed, however, that energy requirements beyond the processing stage are not included. If they were, the data might well look different. That is, if energy costs of refrigeration through the marketing stage were added on, energy would probably take a bigger bite out of the food dollar paid for frozen fruits and vegetables than for canned.

ENERGY COSTS FOR SELECTED FOOD GROUPS

Food Groups	Energy cost per dollar of processed products[1]
Sugar	.167
Butter, cheese, and condensed milk	.107
Canned fruits and vegetables	.106
Frozen fruits and vegetables	.105
Flour and cereals	.099
Meat products	.097
Ice cream	.087
Fluid milk	.086
Soft drinks	.085
Bakery products	.067
Alcoholic beverages	.063

[1] Energy costs through processing stage only; energy used in distribution and marketing is not included. Energy cost based on national average price of $2.33 per million BTU's.

PL 92-500: A Tough Act to Follow



PL 92-500 is not just another number to some farmers.

As the legal code for the 1972 Federal Water Pollution Control Act, it has special significance to those who irrigate their lands.

The law's goal is to eliminate the discharge of pollutants into our Nation's waters by 1985. An interim goal is to achieve water quality that is "fishable and swimmable" by 1983. The goal, researchers are finding, may be tough for irrigators to achieve, though.

Under the National Pollutant Discharge Elimination System (NPDES), a permit is required from either the Environmental Protection Agency (EPA) or the designated State agency to discharge pollutants into waters—these pollutants include salts, nutrients, pesticide residues, and sediments as well as industrial wastes. Farmers using irrigation must apply for an NPDES permit and self-monitor their surface irrigation drainage in terms of both amount and content—salinity, suspended matter, etc.

Irrigation's importance. Since over 40 million acres of our harvested cropland—or nearly 12 percent—is irrigated, any law pertaining to irrigation waters can affect a sizable portion of the farm sector.

The 17 western States account for around 90 percent of the irrigated lands, California leading with 9 million irrigated acres. Texas is next in line with 8 million irrigated acres.

What are the impacts of PL 92-500 on irrigated agriculture, and how can agriculture comply with the law's statutes? The Environmental Protection Agency and the Economic Research Service have been supporting a 2-year study on these questions at the University of California at Davis.

Timetable problems. Basically, the study has concluded that irrigated agriculture cannot meet the law's timetables due to various reasons:

- Unlike industry, irrigated agriculture doesn't have "plumbing and valves" with which to easily shut off or redirect water flow. In addition, irrigation is subject to the variable resources of sunlight, soil, and water.
- As far as agriculture is concerned, there may be conflicts between State regulations and the Federal law. For example, in California, the State's Porter-Cologne Water Quality Control Act applies not only to surface waters (as does PL 92-500), but ground waters as well.
- Irrigated agriculture gets back not only water and effluents that it originates, but also other runoff. Therefore, there is a potential danger that controlling irrigation water pollution on the surface may actually transfer the problems underground.
- Control of surface irrigation return flows may result in smaller emissions of pollutants, but they may be more concentrated. Also, other problems could develop, such as smaller summer flows in streams, a diminished supply for downstream water users, and in places near the coast, an inadequate flow to keep back sea water.
- Current State water laws are unclear as to what rights certain users have to the quality of the water they receive. Under the Doctrine of Prior Appropriation, the first user has seniority over all subsequent users on the watercourse, but his right extends only to "beneficial use"—a term open to question.
- Although the increased costs of controlling irrigation-related pollution would eventually be passed on to the consumer, the short-term effects on the farmers—particularly the smaller ones—could be substantial. In fact, in areas of the country where irrigation return flows are of poor quality, some farmers might be forced to abandon irrigated agriculture in the face of steep pollution-control costs.

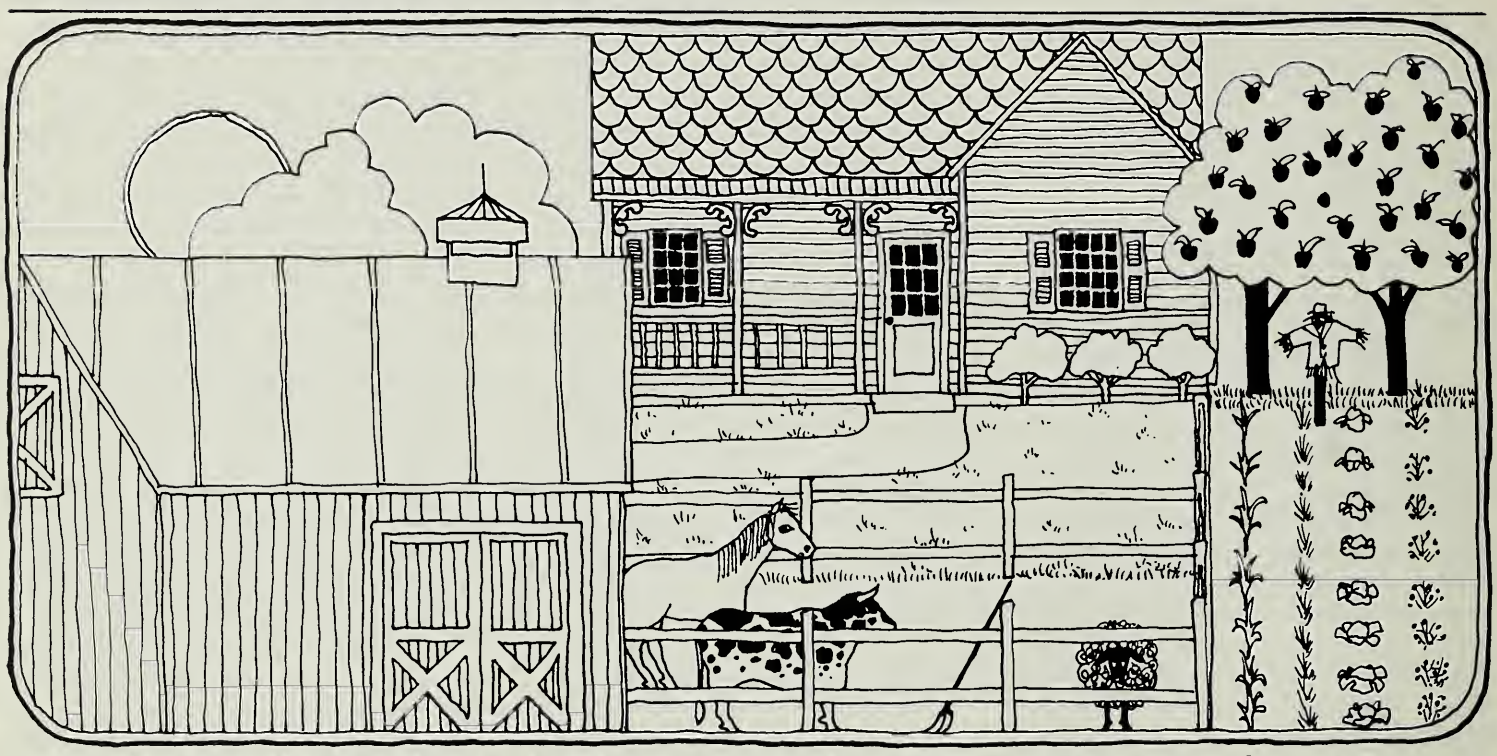
Controls. Recognizing that pollution problems do exist in agriculture as well as in other sectors of the economy, the EPA-ERS study has some recommendations for controls.

In general, the study recommends that any such controls should be flexible, taking local conditions into consideration. Also, it stresses that long-term effects of controls should influence any policy decisions.

More specifically, the study proposes that any control measures deal with problems peculiar to irrigated agriculture, such as point/nonpoint pollutant sources, surface/subsurface return flows, and controllable/noncontrollable runoff. In addition, the study suggests a restructuring of the NPDES permit system to spread the costs of monitoring as well as cut down on the number of permits.

[Based on a report to the California State Water Resources Control Board, "Irrigation Tailwater Management, Conclusions and Recommendations With Regard to PL 92-500 and the NPDES Permit Program," by K. K. Tanji, J. W. Biggar, R. J. Miller, W. O. Pruitt, W. C. Kinney, and R. J. Schnagl, all at the University of California at Davis, and G. L. Horner, Natural Resource Economics Division.]

The Small Farm: A Surviving Enterprise



Even after years of general farm enlargement, the American small farm is still the most common agricultural enterprise.

Two-thirds of the Nation's farms may be classified as "small," having gross sales of less than $20,000 yearly. Realized net farm income from them averaged about $2,300 in 1975, with off-farm income much more, at $12,000.

Many small-scale farmers are thus part-timers, and highly dependent on off-farm earnings. In 1974, 961,000 farmers considered their principal occupation something other than farming and most of these people operated small-scale farms.

No disappearance likely. Although the small farms are not about to go the way of the horse-drawn plow, their numbers are steadily shrinking. The slip in the number of farms comes from mechanization, increasing average farm size, and price inflation. The Census of Agriculture reports that the number of farms with gross sales under $20,000 dropped from 2.2 to 1.7 million between 1969 and 1974. At the same time, the total farm numbers fell from 2.7 million to 2.5 million. The relative decline in small farm numbers was therefore much sharper than the average for all farms.

Some small farms expanded in size to take advantage of modern technology. Others were consolidated into larger farms as some small-scale farmers dropped out of farming altogether. Also, a substantial number of farms moved above the $20,000-gross-sales class due to a 79-percent increase in prices received by farmers between 1969 and 1974.

The lure of the city. Also acting to reduce the number of farms is the choice of many farm people to head for higher income, nonfarm jobs.

Regardless of the definition used to describe a farm, it's clear that the small farms, though numerous, represent a rather small portion of total farm income. Example: Two-thirds of the Nation's farms—the small farms—account for less than 11 percent of total cash receipts from farming.

Besides their relatively small contribution to all agricultural sales, other characteristics of small farms include:

- Small-scale farmers control about 400 million acres of American

farmland—38 percent of all land in farms.

- Although small-scale farms can be found in every part of the country, 70 percent of them are in the Southeast and North Central States.
- Small-scale farms lean more toward crop production than do larger farms, and less toward livestock, concentrating in tobacco and general farming. However, many small farms raise small numbers of beef cattle and feeder pigs.
- Small operators are more likely to own the land they farm, while larger farms tend to combine owned and rented land.
- They are likely to owe less debt as a percentage of total farm value, compared with larger farms.
- They also use substantially less fertilizers, pesticides, and other chemicals per acre than large farms.

Small, but not poor. None of these broad characteristics of small-scale farms includes poverty. That's because the number of poor people in farming has declined threefold since 1960, and is likely to continue downward.

Moreover, nonwhites have migrated out of the small farm category more rapidly than whites, thus blurring racial identities as a factor in small-scale farming. Still, nearly one-half of the remaining nonwhites living on farms were classified as part of the farm poor. A fifth of the 457,000 poor farm households were headed by a nonwhite.

While some of the problems— such as extreme poverty—are easing, small-scale farmers still have other problems unique to their situation. The small-scale farmers often find it difficult to use modern methods and technologies, partly because of a lack of knowledge and experience, partly because of the scale of operation, and partly because some technologies are too expensive.

Coupled with this problem is the fact that small-scale farmers purchase small amounts of inputs. Therefore, they have to buy for more than their big-operator cousins.

Coping. How to help the small-scale farmer cope with these problems? ERS has several projects underway. At Tennessee State University, cooperative work is underway to develop budgets for enterprises which could more efficiently use the labor and other resources of the small-scale farmer.

In another program, ERS is working with Alabama's Tuskegee Institute to identify and analyze the conditions necessary for a small farm to develop into a more productive venture.

Off-farm work remains most important to the majority of small-scale farms, though, and efforts are being made in USDA programs to develop and attract industries to create off-farm employment in rural areas. In line with this effort, technical assistance is being given to community leaders in organizing medical, fire, and other community services, making communities more desirable for industry.

[Based on special material from George W. Coffman and Richard J. Edwards, National Economic Analysis Division.]

The Poor Farmer

The stereotyped picture of the poor farmer struggling to make ends meet—is it still accurate? Not entirely, no.

Sure, there are still poor farmers, but since 1960 their number has declined threefold, and it continues to shrink. Less than 16 percent of all farmers — 457,000 households with farm-related incomes — were under the poverty line of $4,300 a year for a family of four with a male head of household in 1974. More than half of all farmers were officially defined as being poor in 1960.

The proportion of poor farmers relative to the whole population is also changing. In 1960, 19 percent of all poor people in the U.S. lived on farms. In 1974, only 6 percent of America's poor people were farmers. The key to these changes is two-layered:

1. People have been steadily moving out of farming. The number of people with a farm residence declined by more than 5.5 million between 1960 and 1974. But not all of the people who fled farming are now better off. Some have merely joined the ranks of the urban poor.
2. Many of the small-scale farmers who remained took off-farm jobs to supplement their farm incomes, and a few managed to increase the size of their farms to boost their incomes.

The geographical distribution of farm poverty tends to follow that of small-scale farms, but the two are not precisely the same. While small-scale farms are mostly spread widely over the Southeast and North Central States, about 50 percent of the poor farms are concentrated in the Southeast.

Commodity Profile

Sugar: The Uncertainty of Sweetness

A bittersweet sugar season has closed in the U.S. Beet sugar production was high, cane production slipped because of freezes, and prices plummeted.

Total 1976/77 U.S. sugar output was over 6.6 million tons (raw value). Beet sugar alone, at 3.9 million tons, was second only to the record 1975/76 crop of 4 million tons.

U.S.-grown cane sugar accounted for 2.7 million tons (raw value), down from 2.9 million in 1975/76. Severe freezes this past winter in Florida and Louisiana resulted in a loss of about 200,000 tons.

Moreover, prices have dropped dramatically, from 1974's abnormally high $29.50 per hundredweight for raw sugar, to 1975's $22.47, and last year's $13.32 (New York spot price).

Plantings down. The coming season's sugar output is likely to be somewhat below that of 1976/77. Major reason: reduced sugarbeet plantings, caused by low prices, and by lack of water for irrigation. In fact, U.S. beet farmers have indicated they intend to cut back plantings to 1.34 million acres, about 12 percent below the 1975 level.

U.S. cane producers, however, will probably maintain their acreage near the 1976 level of 772,000 acres. The lack of change reflects the longer growing cycle for cane, which can be 3-5 years, compared with beets, which are planted each year. Cane farmers cannot respond to price fluctuations as rapidly as beet growers, so cane acreage changes more slowly.

Uncertain cane. Although acreage is about the same, the size of the coming cane crop is less certain. While cane in Florida and Louisiana has suffered at the chilling hands of Mother Nature, field moisture levels this spring are generally high.

The present abundant sugar supply both in the world and the U.S. has resulted in lower prices at the supermarket. In 1974, when American consumers were eating 97 pounds of refined sugar a year and sugar supplies were tight, retail prices shot up to a record 59 cents a pound (January 1975), and farmers responded in 1975 by planting more sugarbeet acreage.

Sweetness rejected. But by early 1975, high sugar prices around the world had caused many U.S. consumers to swear off sugar, and consumption dropped to 90 pounds per capita for the year. Likewise, retail prices plunged to 26 cents by December 1975, partly because demand fizzled.

But the demands of the sweet tooth and the lowered sugar prices that resulted from the oversupply have since had their effects. In 1976, as retail prices fell to an average of 24 cents, sugar consumption climbed

COMMODITY PROFILE: SUGAR*

Situation:	
Production	
Beets	3.9 million tons of beet sugar in 1976/77.
Cane	2.7 million tons of cane sugar in 1976/77.
Outlook:	
Acreage	
Beets	About 1.3 million acres in 1977/78.
Cane	About 772,000 acres in 1977/78.
Imports	
Beets	Very little beet sugar is imported.
Cane	The U.S. may import 4.4-4.9 million tons of cane sugar in 1977.
Trends	Continued low beet and cane sugar prices could discourage production while encouraging consumption. If U.S. sugar prices rise very much from current levels, it will likely encourage increased use of high fructose corn sirup.

*In terms of raw value.

back to 95 pounds per capita, and 1977 consumption is expected to be within 2 pounds of that.

Total sugar deliveries for 1976 were just short of 11 million tons, of which nearly 4 million tons, or 35 percent, was beet sugar, almost all of it grown domestically. The 35 percent last year compares with 1975's 33 percent and 1974's 27 percent. In 1977, the share is expected to slip back to 1975 levels because of decreased plantings reflecting current low prices and weather uncertainties.

A worldly look. All plans for U.S. plantings, then, must take into account the world situation, for the U.S. normally imports about 40-45 percent of its sugar. Last year, nearly 4.7 million short tons—almost all of it cane—were brought in.

While world sugar prices have recently increased slightly, they are still low. As in the U.S., growers in exporting countries increased their plantings in response to high sugar prices in 1974, and then were left with excess sugar when the prices drove consumption down. As a result, world sugar stocks are ample—an estimated 20 million tons, or nearly a fourth of this year's consumption. And there's a chance the 1977/78 (September-August) crop may add to the current abundant supplies.

By way of background, the 1976/77 crop was a bumper crop all over the world. About 86 million short tons were harvested, 4 percent above year-earlier levels.

But ample supplies are not the only uncertainty facing the domestic sugar industry. Another question mark is the potential replacement of sugar by lower priced high fructose corn sirup (HFCS).

A growth slowdown. But HFCS markets have not developed as rapidly as predicted a few years ago when sugar prices were high. Now, as prices remain low, the incentive for manufacturers to invest in new plants and equipment isn't there, and HFCS continues to make only a small dent in the sugar market. However, the dent is slowly growing larger, and higher sugar prices could yet trigger rapid expansion of HFCS markets.

Another concern involves saccharin, the artificial sweetener. The U.S. Food and Drug Administration has proposed a ban on saccharin as a food additive—accounting for about 90 percent of saccharin use—because very high doses of it were found to cause cancer in rats. If the ban becomes final, possibly this summer, it could cause a small increase in the amount of sugar consumption, perhaps 1-2 percent.

Experts say this small impact is because saccharin is used largely by dieters, diabetics, or others who can't or won't switch to sugar if saccharin is taken off the market.

[Based on February and May 1977 issues of *The Sugar and Sweetener Report* by Fred Gray and Thomas Little, Commodity Economics Division, and Leslie Hurt and Gordon Patty, Foreign Agricultural Service.]

Bitter Times for Sugar Beets

Plummeting sugar prices have sprouted new problems for U.S. beet producers: Some of the processing plants that buy their crops are closing.

Four in Colorado are shutting down, largely because profits have been small or nonexistent. Without processing facilities, area farmers will have no nearby place to sell their beet crops, and will have to look for alternatives.

Growers are responding to the plant closings in several ways:

- Some growers have proposed that they themselves subsidize the plant operations, just to keep them going.
- Those growers who can afford the transportation expenses are shipping their crops to distant processors. But for most farmers, this option is out of the question. Transportation costs for the beets can cut profits to nothing.
- Many growers are getting out of the sugarbeet business, switching to other crops.

Chances are not considered good for new plants; neither are the chances good that the closed plants will be reopened.

A typical plant can cost $50 million or more to build, and low sugar prices are not currently affording enough return on investment to induce construction.

The cost of restarting a closed facility is also high, since much of the equipment is being sold off as operations cease.

Whether the closing of four Colorado beet sugar plants out of an estimated 55 plants nationwide (beet and cane) represents a trend isn't known yet. It's too early to tell. But growers elsewhere are keeping one eye on sugar prices, the other on nearby plants, and are plainly worried.

[Based on special material from Fred Gray, Commodity Economics Division.]

Pesticides' Battle Against the Bug

Farmers are at an advantage in this year's battle against the bug, at least as far as pesticides are concerned. With production up 10 percent and large carryover stocks, net supplies are ample for nearly all products.

Production facilities are operating at a somewhat lower rate of capacity this year—82 percent compared with 86 percent last year—thanks to a 16-percent overall capacity expansion. Herbicide capacity is up nearly a fourth, resulting in production facilities operating at less capacity than in 1976.

On the other hand, insecticide facility expansion for 1977 didn't keep pace with planned output. As a result, insecticide plants are operating at 88 percent of capacity, compared with 85 percent last year.

Price changes. Most prices are basically unchanged from 1976, except for products in abundant supply, which are down somewhat. Depressed prices are especially predominant for certain herbicides.

Pesticide demand for 1977 is estimated to be up 5 percent, compared with a 14-percent boost in supplies. The increased demand is largely the result of farmers' intentions to plant more soybeans and cotton and an expected expansion in the use of herbicides.

Government regulations continue to play an important role in pest control. Of primary concern this year is the final implementation of the current pesticide control act—FIFRA Amended. All pesticide products registered before 1972 must be reregistered and all "restricted use" pesticide applicators must be certified by October 1977. However, this deadline may be extended.

World use. On the world scene, both the developed and developing nations will continue their dependency on pesticides for some time. The developed nations use about three-fourths of the world's pesticide output, while accounting for less than a third of the world's population. In general, these countries are searching for nonchemical methods of pest control, but for the near future, pesticides will remain the primary method of pest control.

On the other hand, the developing nations are still generally suffering from poor diets, and insects and plant diseases frequently destroy many crops. Thus, the benefits of increased pesticide use in most of the developing countries will probably exceed the risks for some time to come. For the foreseeable future, growth in pesticide use in these countries will be largely confined to greater use of insecticides and fungicides. Abundant labor supplies and the shortage of capital will preclude any substantial increase in the use of herbicides, except for unique weed problems which can be controlled with chemicals or for use by large commercial producers.

Projections. USDA projections for the period from 1974 to 1985 indicate little change in insecticide and fungicide use and an annual increase of 5-6 percent in herbicide use. These projections assume greater use of reduced tillage and pest management practices, increased pest resistance, and greater use of pesticide combinations (particularly for herbicides).

[Based on *Evaluation of Pesticide Supplies and Demand for 1977*, by Paul A. Andrilenas and Theodore R. Eichers, National Economic Analysis Division.]

Economic Trends

[1] Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. [2] Average annual quantities of farm food products purchased by urban wage earner and clerical worker households (including those of single workers living alone) in 1959-61—estimated monthly. [3] Annual and quarterly data are on 50-State basis. [4] Annual rates seasonally adjusted first quarter. [5] Seasonally adjusted. [6] As of March 1, 1967. [7] As of March 1, 1975. [8] As of February 1, 1976. [9] Beginning January 1972 data not strictly comparable with prior data because of adjustment to 1970 Census data.

Source: U.S. Dept. of Agriculture (Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Monthly Retail Trade Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale and Consumer Price Index).

Item	Unit or Base Period	1967	1976 Year	1976 Mar.	1977 Jan.	1977 Feb.	1977 Mar.
Prices:							
Prices received by farmers	1967=100	—	186	186	183	187	189
Crops	1967=100	—	198	195	198	203	210
Livestock and products	1967=100	—	177	178	170	174	171
Prices paid, interest, taxes and wage rates	1967=100	—	192	191	198	200	201
Prices paid (living and production)	1967=100	—	188	187	192	194	196
Production items	1967=100	—	193	193	196	199	201
Ratio [1]	1967=100	—	97	97	92	94	94
Wholesale prices, all commodities	1967=100	—	182.9	179.6	188.0	190.0	191.9
Industrial commodities	1967=100	—	182.3	178.9	188.4	189.9	191.6
Farm products	1967=100	—	191.1	187.2	193.5	199.0	202.4
Processed foods and feeds	1967=100	—	178.0	175.8	179.3	181.9	183.9
Consumer price index, all items	1967=100	—	170.5	167.5	175.3	177.1	178.2
Food	1967=100	—	180.8	178.7	183.4	187.7	188.6
Farm Food Market Basket: [2]							
Retail cost	1967=100	—	175.4	174.8	174.3	178.6	178.3
Farm value	1967=100	—	178.8	180.8	172.6	181.1	177.6
Farm-retail spread	1967=100	—	173.2	171.0	175.4	177.0	178.7
Farmers' share of retail cost	Percent	—	40	40	38	39	39
Farm Income: [3]							
Volume of farm marketings	1967=100	—	121	101	130	96	97
Cash receipts from farm marketings	Million dollars	42,817	94,793	6,608	8,747	6,361	6,500
Crops	Million dollars	18,434	47,802	2,672	5,102	2,891	2,700
Livestock and products	Million dollars	24,383	46,991	3,936	3,645	3,470	3,800
Realized gross income [4]	Billion dollars	49.9	104.2	101.5	—	—	105.3
Farm production expenses [4]	Billion dollars	38.2	80.9	79.0	—	—	82.3
Realized net income [4]	Billion dollars	11.7	23.3	22.5	—	—	23.0
Agricultural Trade:							
Agricultural exports	Million dollars	6,380	22,996	1,873	1,907	2,046	2,293
Agricultural imports	Million dollars	4,452	10,992	960	1,139	1,127	1,300
Land Values:							
Average value per acre	Dollars	168[6]	390[8]	—	—	456	—
Total value of farm real estate	Billion dollars	182[6]	397[8]	—	—	461	—
Gross National Product: [4]	Billion dollars	796.3	1,691.6	1,636.2	—	—	1,792.5
Consumption	Billion dollars	490.4	1,079.7	1,043.6	—	—	1,156.8
Investment	Billion dollars	120.8	239.6	229.6	—	—	260.2
Government expenditures	Billion dollars	180.2	365.6	354.7	—	—	380.4
Net exports	Billion dollars	4.9	6.6	8.4	—	—	–4.9
Income and Spending: [5]							
Personal income, annual rate	Billion dollars	626.6	1,375.3	1,341.9	1,444.3	1,461.5	1,485.7
Total retail sales, monthly rate	Million dollars	26,151	54,324	53,344	56,660	58,166	59,558
Retail sales of food group, monthly rate	Million dollars	5,759	11,749	11,176	11,521	11,060	12,148
Employment and Wages: [5]							
Total civilian employment	Millions	74.4	87.5	86.8	88.6	89.0	89.5
Agricultural	Millions	3.8	3.3	3.2	3.1	3.1	3.1
Rate of unemployment	Percent	3.8	7.7	7.5	7.3	7.5	7.3
Workweek in manufacturing	Hours	40.6	40.0	40.3	39.5	40.2	40.3
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	5.19	5.07	5.46	5.43	5.48
Industrial Production: [5]	1967=100	—	129.8	128.1	132.0	133.3	135.1
Manufacturers' Shipments and Inventories: [5]							
Total shipments, monthly rate	Million dollars	46,487	98,545	97,786	103,637	106,466	—
Total inventories, book value end of month	Million dollars	84,527	166,587	157,560	167,482	168,515	—
Total new orders, monthly rate	Million dollars	47,062	98,875	98,550	105,356	107,049	—

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